National Institute of Environmental Health Sciences

Public perception and behavior change in relationship to hot weather and air pollution

Author(s): Semenza JC, Wilson DJ, Parra J, Bontempo BD, Hart M, Sailor DJ, George LA
Year: 2008
Journal: Environmental Research. 107 (3): 401-411

Abstract:

BACKGROUND: Changes in climate systems are increasing heat wave frequency and air stagnation, both conditions associated with exacerbating poor air quality and of considerable public health concern. OBJECTIVES: Heat and air pollution advisory systems are in place in many cities for early detection and response to reduce health consequences, or severity of adverse conditions. Whereas the ability to forecast heat waves and/or air pollution episodes has become increasingly sophisticated and accurate, little is known about the effectiveness of advisories in altering public behavior. METHODS: Air quality and meteorological conditions were measured during advisory and control days in Portland, OR and Houston, TX in 2005 and 2006 and 1962 subjects were interviewed by telephone about their perception and response to these conditions. RESULTS: Elevated ambient temperatures were accurately recognized regardless of air conditioning use; in Portland, respondents resorted to active cooling behavior (AC, fan, etc.), while in Houston no such change was observed. More heat-related symptoms were reported in Portland compared to Houston, probably due to low air conditioning use in the northwest. One-third of study participants were aware of air quality advisories but only approximately 10-15% claimed to have changed activities during such an episode. Not the advisory, however, drove their behavior change, but rather the perception of poor air quality, which was not related to PM(2.5) or ozone measurements. CONCLUSIONS: Messages are not reaching the public during potentially hazardous weather and air quality conditions. Climatic forecasts are increasingly predictive but public agencies fail to mount an appropriate outreach response.

Source: http://dx.doi.org/10.1016/j.envres.2008.03.005

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Public

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Meteorological Factors, Meteorological Factors, Solar Radiation, Temperature

Air Pollution: Ozone, Particulate Matter, Other Air Pollution

Air Pollution (other): NO2;NO

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified, Injury, Other Health Impact

Other Health Impact: heat related morbidity

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content